DIGITAL INTEGRATED AMPLIFIER

KA-D1100EX

INSTRUCTION MANUAL

KENWOOD

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88/12 11 10 9 8 7 6 5 4 3 2 1 87/12 11

Introduction

The purpose of this manual is to acquaint you with the operating features of your new unit. You will notice that in every detail of planning, engineering, styling, operating convenience, and adaptability, we have sought to anticipate your needs and desires.
We suggest that you read this manual carefully. Knowing how to set up your unit to the best advantage will enhance your listening pleasure right from the start. You will also become aware of the ease with which you can adjust your unit to meet your special requirements.

For your records

Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below. Refer to the model and serial numbers whenever you call upon your dealer for information or service on this product.
Model KA-D1100EX Serial number_____

Unpacking

Unpack the unit carefully and make sure that all accessories are put aside so they will not be lost.
Examine the unit for any possibility of shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.
We recommend that you retain the original carton and packing materials for use should you transport or ship the unit in the future.

Rear panel safety precautions

CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
	The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Before applying power

Important!

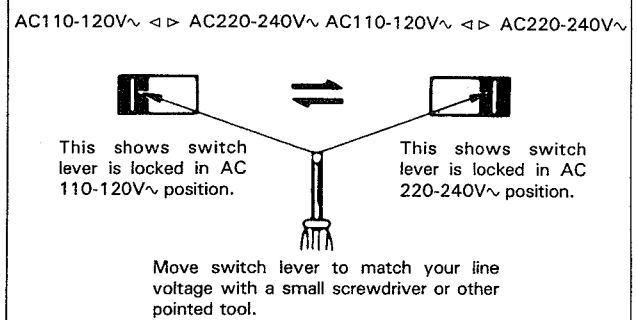
UK. and Europe
Units shipped to European countries are designed for operation on 220 volts AC only. Units shipped to the U.K. are designed for operation on 240 volts AC only. These units are not equipped with an AC voltage selector switch and the discussion of such a switch that follows should be disregarded.

All other countries
Units shipped to countries other than the U.K. and European are equipped with an AC voltage selector switch on the rear panel left side of enclosure. Refer to the following paragraph for the proper setting of this switch.

AC voltage selection

This unit operates on 110-120 volts or 220-240 volts AC. The AC voltage selector switch on the left side of enclosure is set to the voltage that prevails in the area to which the unit is shipped. Before connecting the power cord to your AC outlet, make sure that the setting position of this switch matches your line voltage. If not, it must be set to your voltage in accordance with the following direction.

Note:
Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC voltage selector switch.


AC110-120V~ ◁▷ AC220-240V~ AC110-120V~ ◁▷ AC220-240V~
This shows switch lever is locked in AC 110-120V~ position.
This shows switch lever is locked in AC 220-240V~ position.
Move switch lever to match your line voltage with a small screwdriver or other pointed tool.
AC voltage selector switch

WARNING:
TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

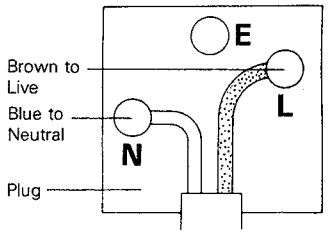
For United Kingdom
The mains plug must be removed from the wall socket prior to any internal examination.

Important
The wires in this mains lead are coloured in accordance with the following code:

Blue	Neutral
Brown	Live

The wires in this mains lead must be connected to the terminals in the plug as follows:

Wire colour	Plug terminal marking
Blue	N or Black
Brown	L or Red

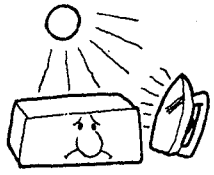


Notes:
1) If a 13-amp plug is used, this must be fitted with a 5-amp fuse.
2) If a 3-pin plug with earthing contact is used, no wire must be connected to the E terminal.

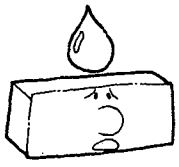
Before operation

Notes on installation

Do not place the unit in a place which is exposed to direct sunlight, near a heating appliance, etc.

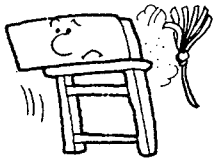


Do not place a vase containing water, makeup, etc. on the unit. Do not use in a humid place.

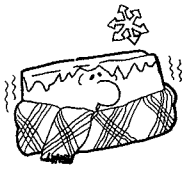


To maintain good ventilation, do not put records or a tablecloth on the unit. Place the unit at least 10 cm away from the walls.

Choose a location that is relatively free from vibration or excessive dust.



The unit may not function properly if used at extremely low, or freezing temperatures.

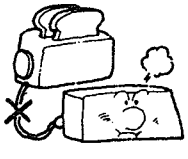


Safety precautions

Never remove the case. If the internal parts are touched, accidentally, a serious electric shock might occur.

Never touch internal parts.

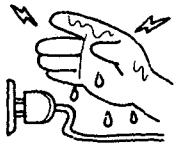
Do not connect other audio equipment with a power consumption larger than that specified to the AC outlet on the rear panel. Never connect other electrical appliances, such as an iron or toaster.



Never connect other electrical appliances.

If a metal object, such as a hair pin or a needle, comes into contact with the power socket on the rear panel, a dangerous electric shock may result. For families with children, never permit children to put anything, especially metal, inside this unit.

Touching the power plug when your hands are wet may result in a serious electric shock.



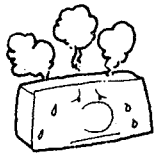
Never touch with wet hands.

Never pull, bend or extend the power cord. This could damage the power cord, resulting in a broken cord or short-circuit.

Always grasp the plug.

In case of abnormal smell

If an abnormal smell or smoke is detected, immediately turn the power OFF and pull out the power cord. Contact your dealer or nearest Service Station.

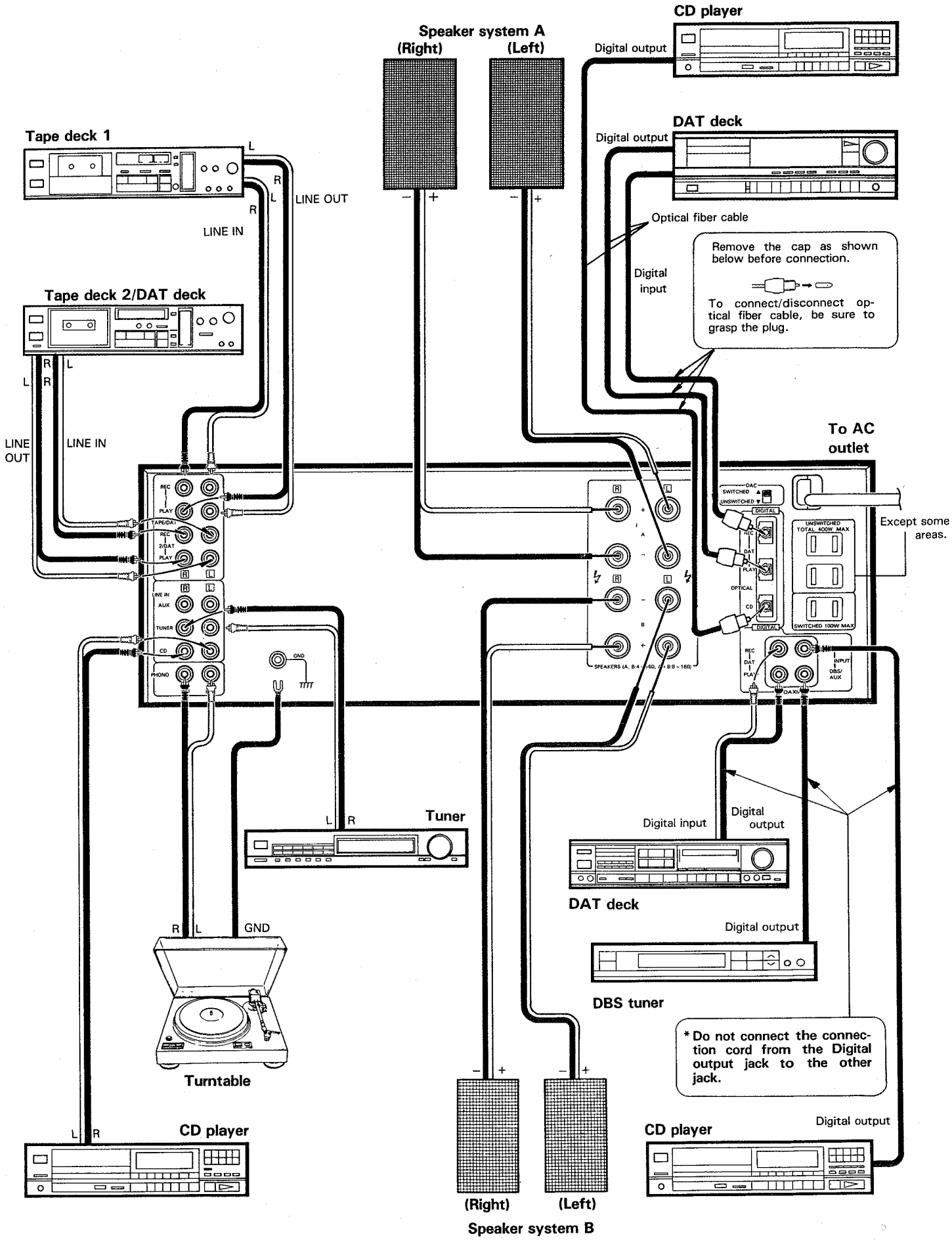


Cleaning

Do not use volatile solvents such as alcohol, paint thinner, gasoline, benzine, etc. to clean the cabinet. Use a silicone cloth or a clean dry cloth.

Silicone cloth Thinner Benzine

System connections

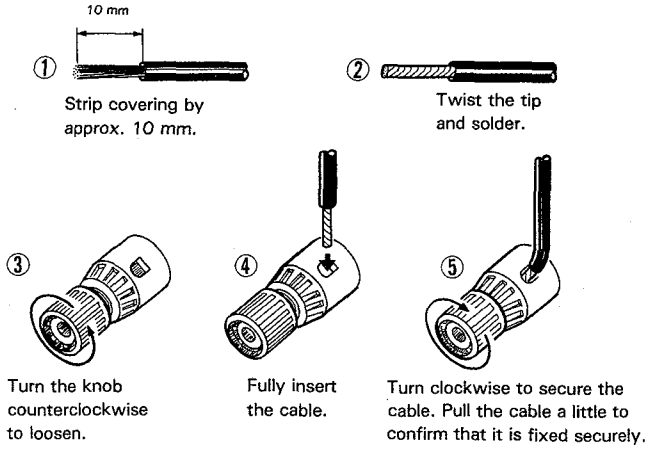


Connection of speaker system

- Two sets of speaker systems, A and B, can be used simultaneously. Connect the left speakers to the SPEAKERS terminals and right speakers to the terminals. Be sure to respect the (+) and (−) polarities.
  If the connection is made with reversed polarity, it will lead to a degraded stereo effect with an ambiguous sound image lacking something at the center.

Notes:

1. **Before connecting the speaker cables, be sure to turn the POWER switch OFF.**
2. **Check that no lead wire is in contact with other terminals.**


10 mm
①
Strip covering by approx. 10 mm.
②
Twist the tip and solder.
③
Turn the knob counterclockwise to loosen.
④
Fully insert the cable.
⑤
Turn clockwise to secure the cable. Pull the cable a little to confirm that it is fixed securely.

Connection of speaker cable

- **Speaker impedance**
  When connecting only to either the A or B SPEAKERS terminals, use speakers with an impedance from 4 to 16 ohms.

When connecting to both the A and B SPEAKERS terminals for playing two pairs of speakers simultaneously by setting the SPEAKERS switch to "A and B ON", use speakers with an impedance from 8 to 16 ohms.

Note:

Connect only one speaker to one set of SPEAKERS terminals. If more than one speaker cable is connected to a terminal, this could cause to amplifier to malfunction.

Connections of analog audio components

Connections of turntable

Connect the signal cord from the turntable to the PHONO jacks, with the correct L (left-channel) and R (right-channel) connections. Also connect the ground lead to the GND terminal.

Connections of GND terminal

Use this terminal for connection of the ground lead from a turntable, tape deck, etc.

Connections of tape deck or DAT (Digital Audio Tape) deck

This unit has two sets of tape recorder jacks (TAPE1 TAPE2/DAT) for the connection of two tape recorder components.
When two tape decks are used, connect them to both jacks. When a DAT (Digital Audio Tape) deck is used, connect it to the TAPE2/DAT jacks only.

- **Connection for recording:**
  Using an audio connection cord, connect the REC jacks of this unit to the analog LINE IN or REC jacks of the tape deck or DAT deck, with the correct L (left-channel) and R (right-channel) connections.
- **Connection for playback:**
  Using an audio connection cord, connect the PLAY jacks of this unit to the analog LINE OUT or PLAY jacks of the tape deck or DAT deck, with the correct L (left-channel) and R (right-channel) connections.

Connections of tuner

Using an audio connection cord, connect the output jacks of the tuner to the TUNER jacks of this unit, with the correct L (left-channel) and R (right-channel) connections.

Connections of AUX jacks

The components that can be connected to the AUX jacks include another tuner, a playback-only tape deck, VCR or TV tuner.

Connections of CD player

Using an audio connection cord, connect the analog output (LINE OUT) jacks of the CD player to the LINE IN CD jacks of this unit. Make sure the L (left) and R (right) channel jacks are connected correctly.

Connections of digital audio components

Connections of DAT (Digital Audio Tape) deck

- **Connection for recording:**
  Connection of a DAT deck having a DIGITAL IN (coaxial input) jack:
  Using the RCA-type coaxial cord provided, connect the DIGITAL IN jack of the DAT deck to the DIGITAL COAXIAL DAT REC jack of this unit.
  Connection of a DAT deck having an optical DIGITAL IN connector:
  Using the optical fiber cable provided, connect the optical DIGITAL IN connector of the DAT deck to the DIGITAL OPTICAL DAT REC connector of this unit.

- **Connection for playback:**
  Connection of a DAT deck having a DIGITAL OUT (coaxial output) jack:
  Using the RCA pin-cord, connect the DIGITAL OUT jack of the DAT deck to the DIGITAL COAXIAL DAT PLAY jack of this unit.
  Connection of a DAT deck having an optical DIGITAL OUT connector:
  Using the optical fiber cable provided, connect the optical DIGITAL OUT connector of the DAT deck to the DIGITAL OPTICAL DAT PLAY jack of this unit.

Connections of CD player

Connection of a CD player having a DIGITAL OUT (coaxial output) jack:
Using the RCA-type coaxial cord provided, connect the DIGITAL OUT jack of the CD player to the DIGITAL COAXIAL CD INPUT jack of this unit.
Connection of a CD player having an optical DIGITAL OUT connector:
Using the optical fiber cable provided, connect the optical DIGITAL OUT connector of the CD player to the DIGITAL OPTICAL CD jack of this unit.

Connections of DBS/AUX jacks

The output from a DBS (Direct Broadcasting Satellite) tuner, another CD player or another DAT deck can be connected to these jacks.

Notes:

1. **When using a CD player that has both optical fiber connector and coaxial (RCA-type) DIGITAL OUT jacks, or when using a DAT deck that has optical fiber connectors as well as digital in/out jacks, use the optical fiber cable for the connection. This will give higher quality sound as *well as less spurious radiation. If both coaxial and optical* digital jacks (or both digital and analog jacks) are used for the connection, you can compare and check the difference between them.**
2. **Do not forcibly fold the optical fiber cable.**
3. **Before making any connections using an optical fiber cable, be sure to check that the optical fiber connector of the component to be used with this unit is of the same type as that used in this unit. Some components use a different type of optical connector than that of this unit. (In such a case, connection to this unit is impossible.)**
4. **Never connect the DIGITAL coaxial jacks to the analog (PHONO, CD, TUNER, AUX, TAPE) in/out jacks. (This may create a malfunction or cause serious damage to the amplifier.)**

Setting of the DAC switch

This switch is used to activate the DAC (Digital-to-Analog Converter) circuit incorporated in this unit, even when the ANALOG/DIGITAL select switch located on the front panel is set to ANALOG. This is useful for operations using the DUAL REC OUT switch.

SWITCHED:
With this setting, the DAC circuit does not function when this unit is in analog operation.

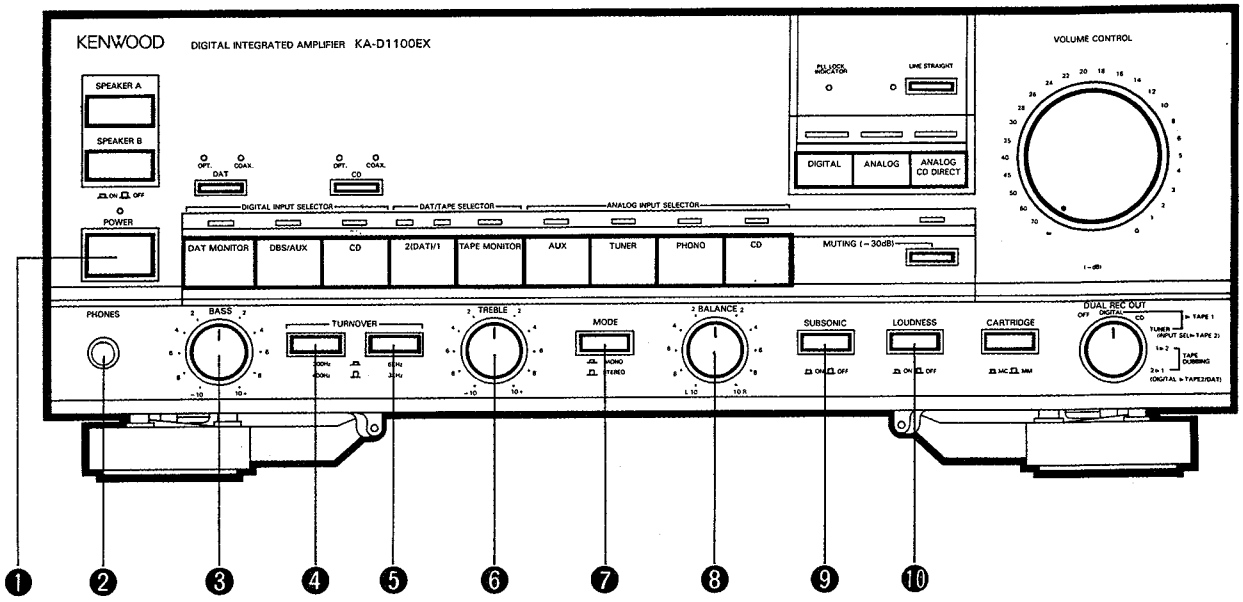
UNSWITCHED:
With this setting, the DAC circuit functions even when this unit is in analog operation. Set the switch to this position when recording a digital source while listening to another analog source in the DUAL REC operation.

AC outlets (Except some areas)

The AC outlets on the rear panel of the unit may be used to supply power to other components in the system, such as turntables, tape decks, etc. Never connect equipment whose power consumption exceeds the maximum value shown at each outlet.

1. **SWITCHED outlet:** This outlet provide power only when the unit is turned on. The maximum total capacity is 100 watts.
2. **UNSWITCHED outlets:** These outlets provide power when the unit is plugged into an active AC wall outlet, regardless of the setting of the POWER switch. The maximum capacity (both outlets) is 400 watts.

Controls and indicators



❶ POWER switch/POWER INDICATOR

Press the switch to turn power ON (⎍). The indicator will flash for a few seconds then it will light indicating the normal operation mode. Pressing the switch again turns the power OFF (⎍).

❷ Headphones jack (PHONES)

Connect the plug of stereo headphones. When listening to the sound only through headphones, set the SPEAKER switches A and B to "OFF"

❸ BASS control

Turning the knob clockwise enhances low frequencies and turning it counterclockwise attenuates them. When the control is at the center position, the frequency characteristic becomes flat.

❹ 200 Hz/400 Hz selector switch

This switch is used to change between the 200 Hz or 400 Hz low frequency ranges (BASS control).

❺ 6 kHz/3 kHz selector switch

This switch is used to change between the 6 kHz or 3 kHz high frequency ranges (TREBLE control).

❻ TREBLE control

Turning the knob clockwise enhances high frequencies and turning it counterclockwise attenuates them. When the control is at the center position, the frequency characteristic becomes flat.

❼ MODE switch

MONO (⎍): Set when playing sound in monaural. Use this position also for checking stereo phases of stereo balance.

STEREO (⎍): Set when playing sound in stereo.

❽ BALANCE control

Adjust the left and right sound balance of speakers and headphones. Turning the control counterclockwise decreases the right sound level and turning it clockwise decreases the left sound level.

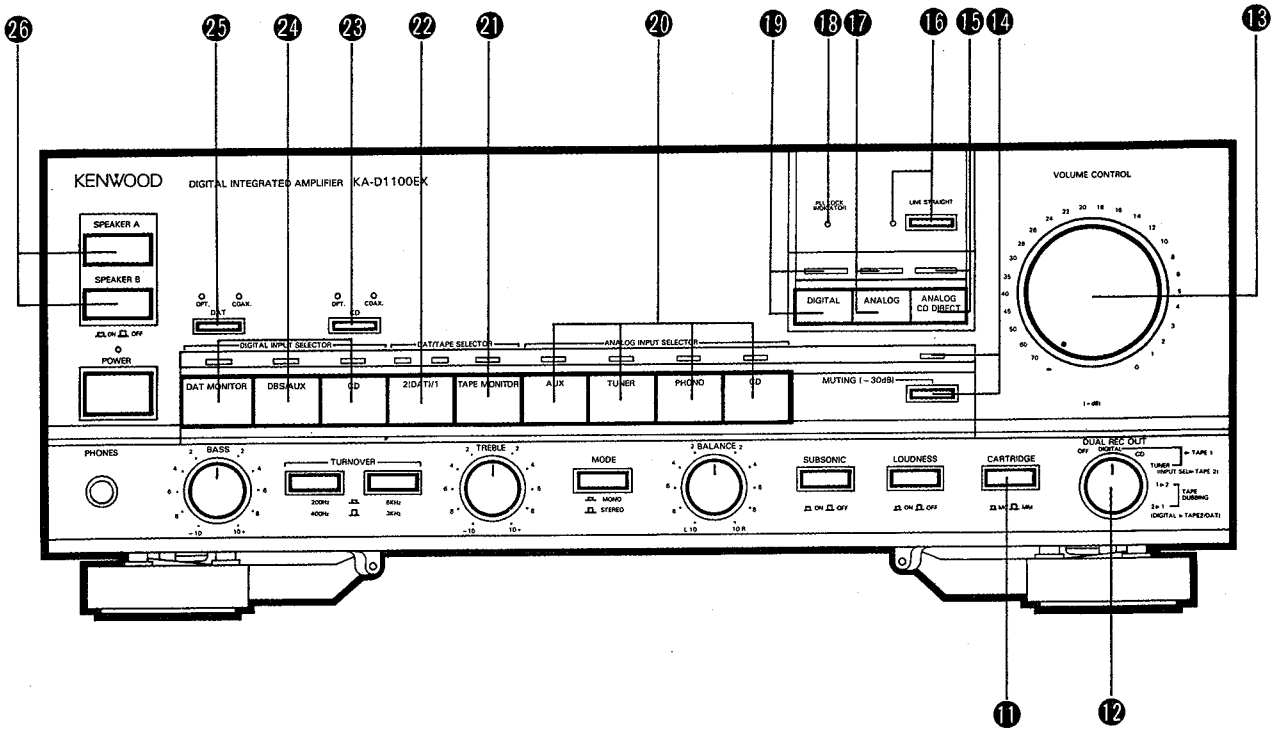
❾ SUBSONIC filter switch

ON (⎍): With this position, low frequencies of 18 Hz or less are eliminated by 6 dB per one octave. Use this position to eliminate low-frequency noise out of the audible range due to warp of disk or the contact of the stylus and disk.

OFF (⎍): With this position, the use of capacitor is eliminate throughout the signal circuitry from the input terminals to the speaker output terminals. This makes the frequency characteristic flat, and is useful for reproduction of very low frequencies.

❿ LOUDNESS switch

Human ears become less sensitive to low frequencies when the sound level is low. Press this switch to ON to compensate for the insufficiency. When the sound level is high, set this switch to OFF.



⓫ CARTRIDGE select switch

When using a turntable, set this switch to the appropriate position according to the cartridge used in the turntable. When an MC cartridge is used in the turntable, press this switch in (⎍), and when an MM cartridge is used, press it again to out (⎍).

⓬ DUAL REC OUT select switch

This switch is used for recording or dubbing.

OFF:

In this position, no signal is output from the TAPE1 and TAPE2/DAT REC jacks on the rear panel. With this setting, all of the tape deck connections are cut. Thus, this amplifier will not be affected by the impedance from the tape decks, and the source sound can be enjoyed with superior quality without interference or induction noise.

DIGITAL►TAPE1, CD►TAPE1, TUNER►TAPE1:

In these positions, the source signal selected by the ANALOG INPUT SELECTOR ⓴ can be recorded on the tape deck or DAT deck (analog) connected to the TAPE2/DAT jacks on the rear panel. At the same time, the signal from the source connected to the digital input jacks, CD jacks or tuner jacks can be recorded on the tape deck connected to the TAPE1 jacks on the rear panel, regardless of the setting of the ANALOG INPUT SELECTOR ⓴

1▷2 TAPE DUBBING:

Set to this position to play back the sound from the tape deck connected to the TAPE1 jacks on the rear panel, while recording this sound onto the tape deck or DAT deck (analog) connected to the TAPE2/DAT jacks on the rear panel.

2▷1 TAPE DUBBING:

Set to this position to play back the sound from the tape deck or DAT deck connected to the TAPE2/DAT jacks on the rear panel, while recording this sound onto the tape deck connected to the TAPE1 jacks on the rear panel.

⓭ VOLUME CONTROL

This controls the sound level of the speakers and headphones. The volumes of both the left and right channels are adjusted simultaneously. No sound is produced when the knob is turned fully counterclockwise, and turning the knob clockwise gradually increases the volume.

While listening to the source sound, adjust the volume level with this knob to an appropriate level.

⓮ MUTING switch (–30 dB) and indicator

Press this switch to mute the signal temporarily. When this switch is pressed ON, the indicator lights and the volume level will be attenuated by 30 dB. When this switch is pressed again, the indicator goes off and the volume level will resume.

With this switch ON, the volume level can be adjusted minutely and detailed setting is made possible using the VOLUME CONTROL knob. So, use this function when listening to music at low level.

⓯ ANALOG CD DIRECT switch and indicator

When this switch is pressed ON (the indicator lights), the signal input to the CD jacks is selected, with the tone control circuits bypassed, so that the high quality sound from the CD player can be enjoyed. With this switch ON, the BALANCE, SUBSONIC and MODE switches do not function. Press this switch again to set to OFF (the indicator goes off).

Note:

This switch functions in priority to the selection of the INPUT SELECTOR.

⑯ LINE STRAIGHT switch and indicator

ON: The LINE STRAIGHT indicator lights when the switch is ON. The signal then bypasses the tone control circuitry, so the tone cannot be controlled but the frequency characteristics become flat.

OFF: The tone can be controlled using the BASS and TREBLE controls.

⑰ ANALOG switch and indicator

Press this switch to listen to an analog source (the indicator lights). Then select the desired source with the ANALOG INPUT SELECTOR switches.

⑱ PLL LOCK indicator

This indicator is lit when the built-in DAC (D/A converter) circuit is engaged. The DAC circuit functions when the DIGITAL switch is pressed to listen to a digital source.
This indicator also lights if the DAC switch on the rear panel is set to the UNSWITCHED position, even when listening to an analog sources with the ANALOG switch pressed ON.
The indicator does not light unless the digital signal is input, even when the DAC circuit is operating.

⑲ DIGITAL switch and indicator

Press this switch to listen to a digital source (the indicator lights). Then select the desired source with the DIGITAL INPUT SELECTOR switches.

⑳ ANALOG INPUT SELECTOR switches and indicators

CD: Press this switch to listen to the sound from the CD player connected to the CD jacks.

PHONO: Press this switch to listen to the sound from the turntable connected to the PHONO jacks.

TUNER: Press this switch to listen to broadcasts from the tuner connected to the TUNER jacks.

AUX: Press this switch to listen to the sound from the equipment connected to the AUX jacks on the rear panel.

Note:

If all of these switches are set to OFF, all of the indicators will go off, indicating an abnormal setting. In this case, press the desired INPUT SELECTOR switch, so that the indicator lights.

㉑ TAPE MONITOR switch and indicator

This switch is used to select the source to be monitored, from between the source component selected by the ANALOG INPUT SELECTOR switches and that selected by the TAPE SELECTOR switch. When this switch is pressed on, the indicator will light and the source selected by the TAPE SELECTOR will be heard. When it is pressed again, the indicator goes off and the source selected by the ANALOG INPUT SELECTOR switch will be heard.
(With this indicator lit, the sound from the turntable or tuner cannot be heard. However, since the sound from the component connected to the digital jacks has priority, if the DIGITAL switch is pressed ON, the digital source sound can be heard.)

㉒ DAT/TAPE SELECTOR switch (2(DAT)/1)

After pressing the TAPE MONITOR switch, select the tape sound to be monitored with this switch, to alternate between (2(DAT)/1) sources. When this switch is pressed in, the deck connected to the TAPE 1 jacks is selected and the TAPE 1 indicator lights. When it is pressed again to out, the deck connected to the TAPE 2/DAT jacks is selected and the TAPE 2/DAT indicator lights.

㉓ CD digital input select switch and indicators (OPT., COAX.)

This switch is used to select the CD player digital input line, from between the optical fiber cable input (OPT.) and the RCA-type coaxial cord input (COAX.).

OPT.: When the CD switch is pressed and the OPT. indicator lights, the signal input to the DIGITAL OPTICAL connector on the rear panel is selected.

COAX.: When it is pressed again and the COAX. indicator lights, the signal input to the DIGITAL COAXIAL jack on the rear panel is selected.

㉔ DIGITAL INPUT SELECTOR switches and indicators

CD: Press this switch to listen to the sound from the CD player connected to the DIGITAL COAXIAL CD jack or the DIGITAL OPTICAL CD connector on the rear panel.

DBS/AUX: Press this switch to listen to the sound from the component connected to the DIGITAL COAXIAL DBS/AUX jack on the rear panel.

DAT MONITOR: Press this switch to listen to the sound from the DAT deck connected to the DIGITAL COAXIAL DAT jack or the DIGITAL OPTICAL DAT connector on the rear panel.

㉕ DAT (Digital Audio Tape) digital input select switch and indicators (OPT., COAX.)

This switch is used to select the DAT (Digital Audio Tape) deck digital input line, from between the optical fiber cable input (OPT.) and the RCA-type coaxial cord input (COAX.).

OPT.: When the DAT switch is pressed and the OPT. indicator lights, the signal input to the DIGITAL OPTICAL connector on the rear panel is selected.

COAX.: When it is pressed again and the COAX. indicator lights, the signal input to the DIGITAL COAXIAL jacks on the rear panel is selected.

㉖ SPEAKER A/B switches

SPEAKER A — Depressing this switch to the ON (⎍) position will connect the output circuits of the amplifier to the speaker systems connected to the SPEAKER A terminals on the rear of the unit.

SPEAKER B — Depressing this switch to the ON (⎍) position will connect the output circuits of the amplifier to the speaker systems connected to the SPEAKER B terminals on the rear of theunit.

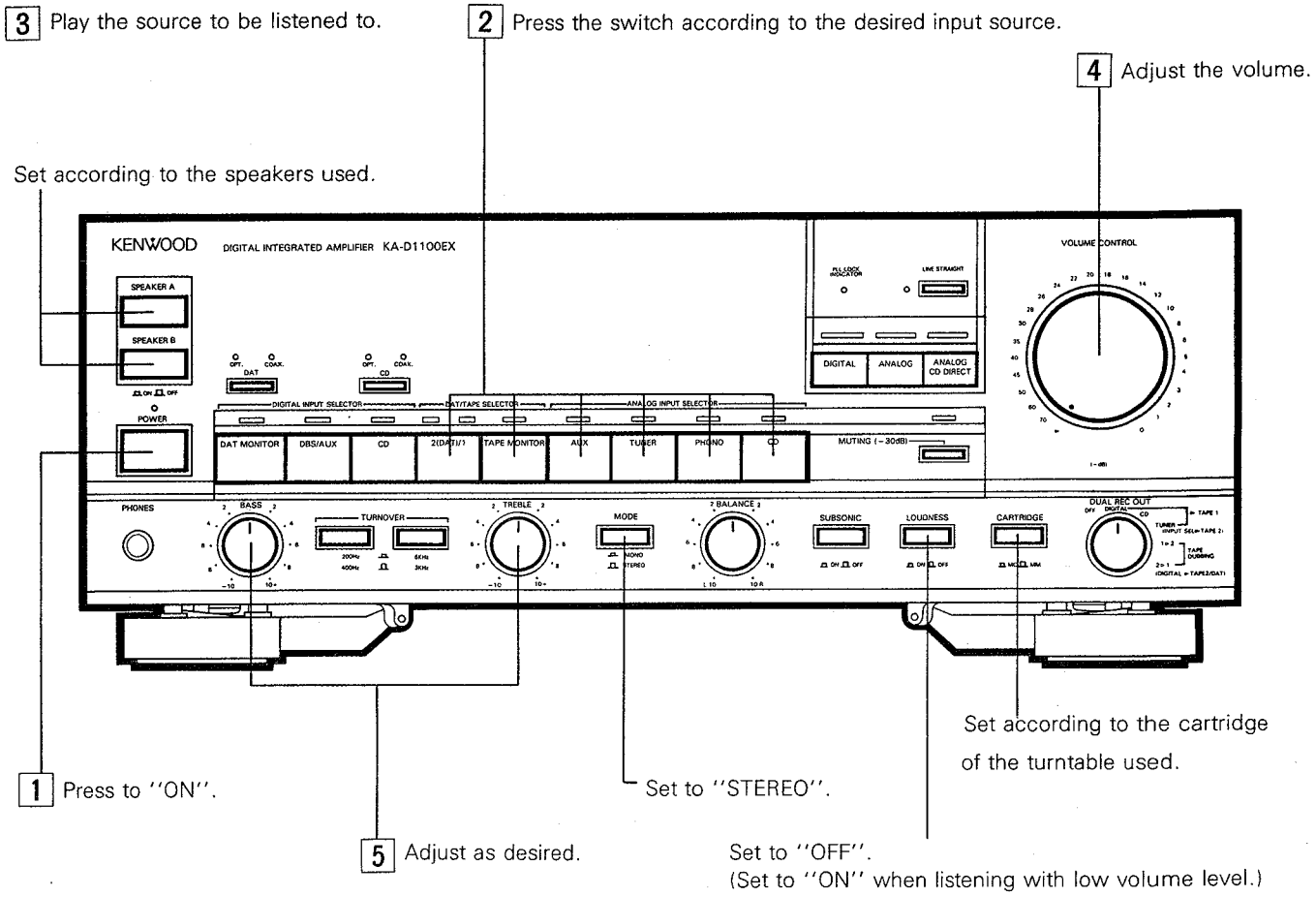
To activate the speakers systems connected to the SPEAKER A and B terminals, depress both the SPEAKER A and B switches to the ON (⎍) position.

Operating instructions

■ Listening to input sources (Turntable, Tuner, CD player, Cassette deck, DAT deck, etc.) connected to the amplifier

* Before turning the power ON, be sure to set the VOLUME CONTROL to the fully counterclockwise (''∞'') position.

* Operate in the order of the numbers.



Listening to radio broadcast

1. Press the ANALOG INPUT SELECTOR switch to TUNER. (The TUNER indicator lights.)
2. Operate the tuner to receive a broadcast.
3. Adjust the tone and volume.

Listening to record play

1. Press the ANALOG INPUT SELECTOR switch to PHONO. (The PHONO indicator lights.)
2. Set the CARTRIDGE select switch according to the cartridge used.
3. Operate the turntable.
4. Adjust the tone and volume.

Note:

Before replacing the cartridge or placing the stylus on the record, it is recommended to decrease the sound level by pressing the MUTING switch or turning the VOLUME CONTROL counterclockwise in order to protect speakers.

Listening to compact discs with a CD player

- **Listening to the sound from the analog lines**

1. Press the ANALOG switch to set for an analog source.
2. Select CD with the ANALOG INPUT SELECTOR. (The corresponding indicator will light.)
3. Operate the CD player connected to the CD jacks on the rear panel.
4. Adjust the volume and tone as desired.

Note:

When the ANALOG CD DIRECT switch is pressed, the signal from the CD player is selected, regardless of the setting of the ANALOG INPUT SELECTOR. At this time, the MODE, SUBSONIC and BALANCE controls do not function.

- **Listening to the sound from the digital lines**

1. Press the DIGITAL switch to set for a digital source.
2. Select CD with the DIGITAL INPUT SELECTOR.
3. Select the input line between OPT. (optical fiber cable input) and COAX. (RCA-type coaxial cord input), with the CD digital select switch.
4. Operate the CD player connected to the DIGITAL OPTICAL connector or the DIGITAL COAXIAL jack on the rear panel.
5. Adjust the volume and tone as desired.

Listening to an analog component connected to the AUX jacks

1. Press the ANALOG switch to set for an analog source.
2. Select AUX with the ANALOG INPUT SELECTOR.
3. Operate the analog component connected to the AUX jacks on the rear panel.
4. Adjust the volume and tone as desired.

Listening to a digital component connected to the DIGITAL DBS/AUX jack

1. Press the DIGITAL switch to set for a digital sources.
2. Select DBS/AUX with the DIGITAL INPUT SELECTOR.
3. Operate the component connected to the DIGITAL DBS/AUX jack on the rear panel.
4. Adjust the volume and tone as desired.

Listening to a DAT (Digital Audio Tape) deck

- **Listening to the sound from the analog lines**

1. Press the ANALOG switch to set for an analog source.
2. Press the TAPE MONITOR switch.
3. Select TAPE 2/DAT with the TAPE SELECTOR.
4. Operate the DAT deck connected to the TAPE 2/DAT jacks on the rear panel.
5. Adjust the volume and tone as desired.

- **Listening to the sound from the digital lines**

1. Press the DIGITAL switch to set for a digital source.
2. Select either OPT. (optical fiber cable input) or COAX. (RCA-type coaxial cord input) with the DAT digital select switch.
3. Select DAT with the DIGITAL INPUT SELECTOR.
4. Operate the DAT deck connected to the DIGITAL OPTICAL PLAY connector or the DIGITAL COAXIAL PLAY jack.
5. Adjust the volume and tone as desired.

Recording onto a DAT (Digital Audio Tape) deck

- **When recording an analog source through the analog output**

1. Set the DUAL REC OUT switch to the DIGITAL►TAPE1, CD►TAPE1 or TUNER►TAPE1 position.
2. Select the source to be recorded with the ANALOG INPUT SELECTOR.
3. Set the DAT deck to recording mode.
4. Operate the source component to be recorded.
5. Adjust the recording level with the input level control of the DAT deck.

- **When recording a digital source through the analog output**

1. Set the DUAL REC OUT switch to the 2▷1 TAPE DUBBING position.
2. Select the source to be recorded with (CD or AUX/DBS) the DIGITAL INPUT SELECTOR.
3. Select the input line between OPT. (optical fiber cable input) or COAX. (RCA-type coaxial cord input) with the DAT digital select switch.
4. Set the DAT deck to recording mode.
5. Operate the source component to be recorded.
6. Adjust the recording level with the input level control of the DAT deck.

Operations of the tape deck

This amplifier has two sets of tape deck jacks (TAPE 1 and TAPE 2/DAT). When tape decks are connected to both of these jacks, recording and playback with both decks is possible, as well as tape-to-tape dubbing.

- **Tape playback**

1. Press the TAPE MONITOR switch then select the tape deck to be used for playback with the TAPE SELECTOR switch (2(DAT)/1) according to the tape deck connected to the TAPE 1 or TAPE 2/DAT jacks on the rear panel.
2. Play a recorded tape on the tape deck.
3. Adjust the volume and tone as desired.

These TAPE 1 and TAPE 2/DAT jacks can also be used for the audio source connection from a Hi-Fi VCR, etc. as well as a tape deck. Its audio channel signals can then be played back in the same way. For more details, refer to the instruction manual of the Hi-Fi VCR.

- **When recording an analog source with the tape deck connected to the TAPE 2/DAT jacks**

1. Select the source to be recorded with the ANALOG INPUT SELECTOR.
2. Set the DUAL REC OUT switch to the DIGITAL►TAPE1, CD►TAPE1 or TUNER►TAPE1 position.
3. Set the tape deck to recording mode.

- **When recording analog signal from a digital source with the tape deck connected to the TAPE 2/DAT jacks**

1. Set the DUAL REC OUT switch to the 2▷1 TAPE DUBBING position.
2. Select the source to be recorded with the DIGITAL INPUT SELECTOR.
3. When the DIGITAL INPUT SELECTOR is set to CD or DAT MONITOR in step 2, select the digital input line between OPT. (optical fiber cable input) and COAX. (RCA-type coaxial cord input), with the DAT digital select switch.
4. Set the tape deck to recording mode.

Note:

Adjust the recording level with the recording (input) level control on the tape deck. The VOLUME control of this unit does not affect the recording level input to the tape deck.

- **When recording with the tape deck connected to the TAPE 1 jacks**

1. Set the INPUT SELECTOR to any position. (Set to the source to be recorded on the deck connected to the TAPE 1 jacks, or to the source to be listened to from the speakers.)
2. Set the DUAL REC OUT switch to the DIGITAL►TAPE1, CD►TAPE1 or TUNER►TAPE1 position to be recorded.
3. For recording analog sources, only the CD player or tuner is available.
4. For recording digital sources, and the select the required source with the DIGITAL INPUT SELECTOR.
5. Set the tape deck to recording mode.
6. Adjust the recording level with the recording (input) level control on the tape deck. The VOLUME control of this unit does not affect the recording signal level.

In the same way as for a tape deck, recording is possible onto a Hi-Fi VCR connected to this unit. (For details, refer to the instruction manual of the Hi-Fi VCR.)

- **Recording monitor**

When the tape deck used for recording is of the 3-head design (in which record, playback and erase heads are provided independently), the recording condition can be checked by monitoring the recorded sound. To do this, press the TAPE MONITOR switch so that the indicator lights, then press the TAPE SELECTOR switch (2(DAT)/1). The just recorded sound can be monitored from the speakers (or headphones) for checking the recording condition.

Note:

To monitor the currently recording sound, the tape deck should be connected for recording and playback at the same time. The recording monitor is not available with a tape deck of the 2-head design.

- **Dubbing from tape deck 1 to tape deck 2/DAT**

1. Set the DUAL REC OUT switch to the 1▷2 TAPE DUBBING position.
2. Set the tape deck connected to the TAPE 1 jacks to playback mode and set the tape deck connected to the TAPE 2/DAT jacks to recording mode.
3. Perform the recording level adjustment with the recording level control on the tape deck connected to the TAPE 2/DAT jacks.

- **Dubbing from tape deck 2 to tape deck 1**

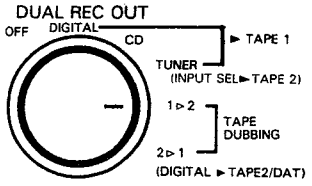
1. Set the DUAL REC OUT switch to the 2▷1 TAPE DUBBING position.
2. Set the tape deck connected to the TAPE 2/DAT jacks to playback mode and set the tape deck connected to the TAPE 1 jacks to recording mode.
3. Perform the recording level adjustment with the recording level control on the tape deck connected to the TAPE 1 jacks.

DUAL REC OUT switch operations

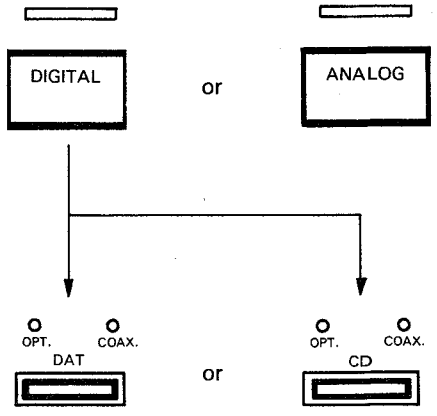
With the DUAL REC OUT switch provided on this unit, two different recording sources can be selected for the tape deck 1 and for the tape deck 2 or DAT deck. And, since this unit also provides a dubbing function between the two decks, the following convenient functions are available.

- **To perform a tape-to-tape dubbing while listening to another source**

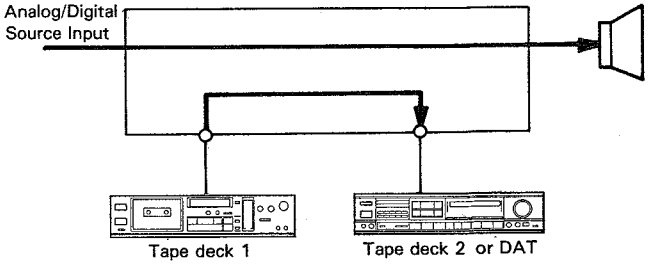
1. Set the DUAL REC OUT switch to the 1▷2 TAPE DUBBING or 2▷1 TAPE DUBBING position for the dubbing operation.



2. Select the source to be listened to with the ANALOG INPUT SELECTOR or the DIGITAL INPUT SELECTOR. For digital sources, press the DIGITAL switch and select OPT. (optical fiber cable input) or COAX. (RCA-type coaxial cord input) with the DAT or CD digital select switch. For analog sources, press the ANALOG switch ON.

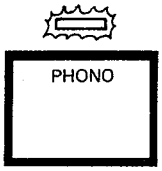


3. Operate the source component to be listened to.
4. Adjust the volume and tone as desired.

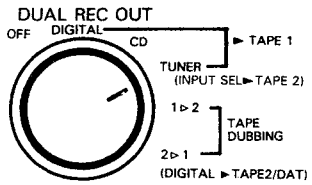


- **To record an FM broadcast while listening to a (phonograph) record**

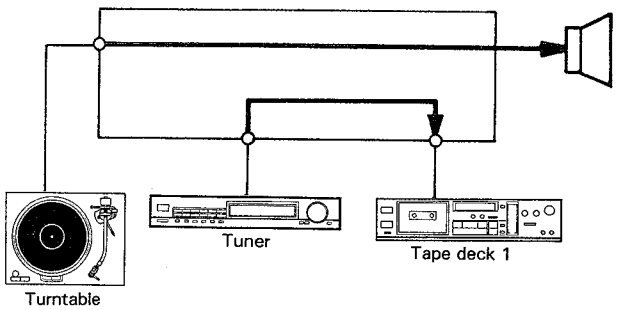
1. Use the tape deck connected to the TAPE 1 jacks for recording.
2. Press the PHONO switch of the ANALOG INPUT SELECTOR, and operate the turntable to play the (phonograph) record.



3. Set the DUAL REC OUT switch to TUNER►TAPE 1, and operate the tuner to tune to the FM broadcast desired.



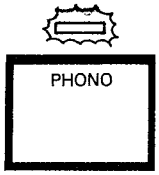
4. Set the tape deck to recording mode to record the FM broadcast. To adjust the recording level, use the recording level control on the tape deck.
5. To change the listening source from the record to the FM broadcast, press the TUNER switch of the ANALOG INPUT SELECTOR. Even in this case, recording of the FM broadcast continues on tape deck 1.



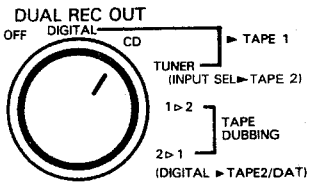
6. This function is also available with any combination of sources other than that of record and FM broadcast.

- **To record both a (phonograph) record and a CD while listening to the record play**

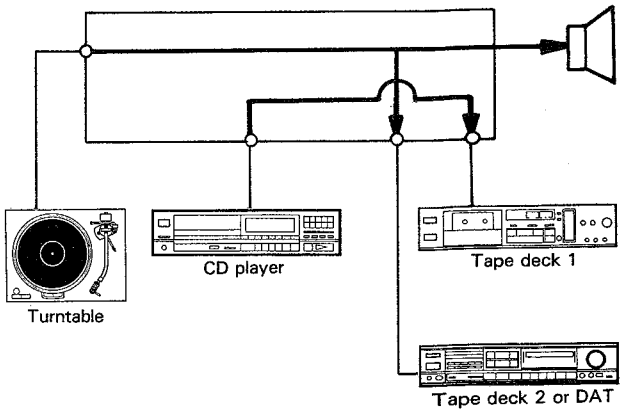
1. Use tape deck 2 (connected to the TAPE 2/DAT jacks) to record from the turntable, and use tape deck 1 (connected to the TAPE 1 jacks) to record from the CD player.
2. Press the PHONO switch of the ANALOG INPUT SELECTOR and set the turntable to play mode.



3. Set the DUAL REC OUT switch to the CD position, then set the CD player to play mode.



4. Set tape deck 2 (connected to the TAPE 2/DAT jacks) to recording mode.
5. Recording of the sound from the turntable starts on tape deck 2 (connected to the TAPE 2/DAT jacks).
6. Set tape deck 1 (connected to the TAPE 1 jacks) to recording mode.
7. Recording of the sound from the CD player starts on tape deck 1 (connected to the TAPE 1 jacks).
8. In this condition, if the TAPE MONITOR switch is pressed and TAPE 1 is selected with the TAPE SELECTOR (2(DAT)/1) switch, the sound from the CD player can also be listened to from the speakers.



9. This function is also available with any combination of sources other than that of turntable and CD player.

In case of difficulty

If your unit should not perform as expected, consult the table below to see if the problem can be corrected before seeking help from your dealer or service representative.

If a malfunction occurs, such as no sound output, when a digital signal source (such as a CD player or DAT deck connected via the digital jacks) is selected using the DIGITAL INPUT SELECTOR switches and the DIGITAL switch, the digital source component, such as a CD player or DAT deck may be defective instead of this amplifier. Therefore, in such a case, please consult a KENWOOD service station with the CD player or DAT deck having digital output, together with this unit.

Note:
In the following conditions, output sound may be temporarily cut; this is not a malfunction.
1. During manual operation, because of an individual's static electricity.
2. When power to a home appliance (refrigerator, vacuum cleaner of fluorescent lamp, for example) is switched ON/OFF.

Troubles that occur when listening to AM/FM broadcasts and record play

Symptom	Possible cause	Remedy
Even when the POWER switch is set to "ON", the POWER indicator does not light nor sound is heard.	The fuse may be blown.	Consult your dealer or nearest service agent.
Sound is not heard from none of the speakers.	1. The SPEAKERS switch may be set to "OFF" 2. The speaker cable may be disconnected. 3. The VOLUME CONTROL may be set to "∞" (fully counterclockwise). 4. The MONITOR switch is depressed.	1. Set to "A", "B", or "A+B". 2. Check the connection at the amplifier's output cable and at the terminals of the speaker boxes. 3. Turn the control clockwise for optimum volume. 4. Check that the TAPE MONITOR indicator is lit. If it is lit, press the TAPE MONITOR switch so that the indicator goes off.
Sound is small on both of the speakers.	The MUTING switch may be in function.	Check if the MUTING indicator is lit. If it is lit, press the MUTING switch again.
Sound is not heard from one of the two speakers.	1. The speaker cable may be disconnected. 2. The BALANCE control may be set to the rightmost or leftmost ("R" or "L") position.	1. Check the connection at the amplifier's output cable and at the terminals of the speaker box. 2. Adjust the BALANCE control.

Troubles that occur only when listening to record play

Symptom	Possible cause	Remedy
When playing record, the audio volume is different from when listening to radio broadcasts.	1. The tuner output level (or signal strength) may differ from the turntable output level. 2. The selection of the equalizer for MM or MC cartridge may be wrong.	1. Set the VOLUME CONTROL for optimum volume. 2. Set the CARTRIDGE switch (MM/MC) to suit the cartirdge used.
No sound is heard from one or both of the speakers.	The turntable's output cable may be disconnected.	Connect turntable's output cable securely into the PHONO terminals.
Large, low humming sound is heard and music is not heard.	1. The turntable's output cable may be connected insecurely. 2. The turntable's grounding wire may not be connected.	1. Connect the turntable's output cable securely into the PHONO terminal. 2. Connect the turntable's grounding wire to the GND terminal on the amplifier's rear panel.
Low hum noise is heard together with the music.	The turntable's output cable may be passing near the power cord.	Correct the position of the turntable's output cable to minimize the hum noise. Invert the left and right polarity of the insertion of the AC power cord.
Keen, squeaky noise is heard together with the music.	The turntable's output cable may be picking up noise from the television power source.	Correct the position of the turntable's output cable to minimize the noise.
When the volume is increased or bass sound is played, large howling sound is heard and no music is heard.	The howling noise may be caused by the speaker vibrations transmitted to the turntable.	Install the turntable and speakers apart. Howling occurs more easily when the floor is soft: Check the installation of the speakers and correct if necessary.

Precaution

Speaker protection circuit

When this unit's power is turned ON with the speaker cable short-circuited, the speaker protection circuit functions and the POWER indicator starts flashing.
In such case, even after the speaker circuitry has been restored for normal operation by eliminating the short-circuit of the speaker cable, the muting circuit still functions to cut the sound off: To stop its operation, turn power OFF then ON again. The POWER indicator will light indicating the normal operation.

Thermal protector circuit

When the temperature inside this unit rises abnormally, the built-in thermal protector circuit functions to automatically turn power and sound off. Although the power will be restored when the temperature drops to a specified level, it is necessary to eliminate the cause of the temperature rise.
The possible causes are the poor ventilation of the installation position, or the short-circuit of speaker cable. Be sure to eliminate the cause before re-strating operation.

Dyna-pneumatic suspension

The feet of this unit incorporate a specially-designed dyna-pneumatic suspension. To assure operation of the suspension effect, do not place other components the total weight of which exceeds 6 kg, on this unit. If the load on this unit exceeds this weight, the suspension effect will be reduced to a level similar to the insulator with special 2-layer structure used in our conventional models.

Specifications

< Power Output >

125 watts per channel minimum RMS, both channels driven, at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.004% total harmonic distortion

Maximum Continuous Power Output (DIN) 1 kHz at 4 ohms	190 W
Maximum Continuous Power Output (DIN) 1 kHz at 8 ohms	150 W
Maximum Continuous Power Output (IEC/NF) from 63 Hz to 12,500 Hz, 0.7%	
Total Harmonic Distortion at 8 ohms	150 W + 150 W
Dynamic Power	150 W per channel at 8 ohms 270 W per channel at 4 ohms 325 W per channel at 2 ohms

Total Harmonic Distortion	
LINE input to SPEAKER output	
(20 Hz ~ 20,000 Hz)	: 0.004% at rated output power at 8 ohms
(20 Hz ~ 20,000 Hz)	: 0.003% at 1/2 rated output power at 8 ohms
(1 kHz)	: 0.0006% at rated output power at 8 ohms
Intermodulation Distortion (60 Hz:7 kHz = 4:1)	: 0.004% at rated output power
Frequency Response	
LINE to SPEAKER	: 1 Hz to 180 kHz/+0 dB, −3 dB
PHONO "RIAA" Response PHONO	: 20 Hz to 20 kHz/±0.3 dB
Signal to Noise Ratio (IHF-A) (IHF'66)	
PHONO (MM)	: 87 dB
PHONO (MC)	: 70 dB (0.25 mV)
TUNER/AUX/TAPE	: 108 dB
Signal to Noise Ratio (IHF-A)	
PHONO (MM)	: 78 dB
PHONO (MC)	: 74 dB
TUNER/AUX/TAPE	: 82 dB
Signal to Noise Ratio Unweighted: 50 mW input (DIN)	
PHONO (MM)	: 58 dB
TAPE/AUX/TUNER	: 60 dB
Power Bandwidth	: 5 Hz to 50 kHz at 0.04% T.H.D., 8 ohms
Subsonic Filter	: 6 dB/Oct. at 18 Hz
Tone Control	
BASS (at 200 Hz)	: ±10 dB
(at 400 Hz)	: ±10 dB
TREBLE (at 3 kHz)	: ±10 dB
(at 6 kHz)	: ±10 dB
Loudness Control (at −30 dB Volume Level)	: 9 dB at 100 Hz
Damping Factor	: 1,000 (50 Hz at 8 ohms)
Input Sensitivity/Impedance	
PHONO (MM)	: 2.5 mV/ 47 kohms
PHONO (MC)	: 0.2 mV/100 ohms
TUNER/AUX/TAPE	: 150 mV/ 47 kohms
Phono Maximum Input Level (PHONO to TAPE REC)	
(MM)	: 200 mV, at 1 kHz
(MC)	: 15 mV, at 1 kHz
Output Level/Impedance	
TAPE REC (Pin)	: 150 mV/330 ohms

< D/A Converter Section >

Input Sumpling Frequencies	: 32 kHz/44.1 kHz/48 kHz
Signal to Noise Ratio	: 108 dB
Total Harmonic Distortion	: 0.0025% at 1 kHz
Channel Separation	: 103 dB at 1 kHz
Digital Inputs	: Optical: −15 ~ −25 dBm Coaxial: 0.5 Vp-p/75 ohms DAT Monitor 0.5 Vp-p/75 ohms
Digital Output	: Optical: −15 ~ −25 dBm Coaxial: 0.5 Vp-p/75 ohms

< General >

Power Consumption	: 350 W
Dimensions	: W 440 mm (17-5/16") H 171 mm (6-3/4") D 441 mm (17-3/8")
Weight (Net)	: 19.5 kg (42.9 lb)

< Accessories >

RCA pin-plug cord	: 1
Optical fiber cable	: 1

Note:
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.